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Research Projects in various areas have been completed but some are continuing. A summary is below.

The book on Transonic Aerodynamics under preparation by J. D. Cole and P. Cook contains a review of older theory and new results in the following areas:

- (i) Stabilization Law of Transonic Flow
- (ii) Far Field at  $M_\infty = 1$  downstream of the Tail Shock
- (iii) Three-Dimensional Far Field
- (iv) Axisymmetric Far Field

Calculations have been initiated of the transonic flow out of an orifice both according to small-disturbance theory and exact gasdynamic theory. (S.-Rimbey)<sup>0</sup>.

An Invited Paper, AIAA-82-0104. Review of Transonic Flow Theory was presented at the AIAA 20th Aerospace Sciences Meeting January 11-14, 1982, Orlando. This paper summarizes much of the research carried out under this Grant. (S.-Rimbey)

(copy enclosed)

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